

What is claimed is:

1. A method comprising:

thermally decomposing a graphite fiber/polymer composite under an inert atmosphere to produce a plurality of graphite fibers bound to a plurality of carbon chars; and

separating said carbon chars from said graphite fibers by molten salt electrochemical oxidation.

2. The method recited in Claim 1, wherein the polymer portion of the graphite fiber/polymer composite is selected from the group consisting of polymeric materials such as epoxies, polyethylene, polypropylene, polyacrylics, and copolymers thereof.

3. The method recited in Claim 1, wherein said thermal decomposition under an inert atmosphere is accomplished by heating said graphite fiber/polymer composite to a temperature from 400-600 °C.

4. The method recited in Claim 1, wherein said thermal decomposition occurs in a molten salt electrochemical cell.

5. The method recited in Claim 1, wherein the temperature of said molten salt electrochemical oxidation ranges from 500-850 °C.

6. The method recited in Claim 1, wherein the temperature of said molten salt electrochemical oxidation ranges from 750-800 °C.

7. A method comprising:

pyrolyzing a mixture of a plurality of graphite fibers and a carbon based material under an inert atmosphere to produce a plurality of graphite fibers bound to a plurality of carbon chars; and

separating said carbon chars from said graphite fibers by molten salt electrochemical oxidation.

8. A method comprising:

separating a plurality of carbon chars bound to graphite fibers by molten salt electrochemical oxidation.

9. A method comprising:

thermally decomposing a mixture of (1) a plurality of graphite fibers and (2) at least one carbon-based material at a temperature ranging from 400-1200 °C under an inert atmosphere to produce a plurality of graphite fibers bound to a plurality of carbon chars; and

separating said carbon chars from said graphite fibers by molten salt electrochemical oxidation at a temperature ranging from 700-850 °C.

10. The method recited in Claim 8, wherein said thermal decomposition occurs in a molten salt electrochemical cell.